MODULAR TRUCK BODY AND METHOD FOR MAKING THE SAME

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A modular truck body comprises a pair of upstanding side modules each having an L-shaped cross section, a bottom module having its outer edges secured to inner edges of the side modules and an upstanding front module secured between the side modules and having its lower edge secured to the bottom module. The modules are aligned and pre-assembled at a manufacturing plant and then disassembled for shipping purposes. At a customer's job site or the like the modules are re-assembled and secured together for installation on the frame of a truck.

7 Claims, 7 Drawing Figures
MODULAR TRUCK BODY AND METHOD FOR MAKING THE SAME

BACKGROUND OF THE INVENTION

The ever increasing size of on and off-highway trucks has given rise to shipping problems; namely, various regulations which dictate the maximum size of a truck and components thereof which may be shipped on commercial carriers. Therefore, truck bodies and the like are normally broken-down into their component parts to comply with such regulations and to also substantially decrease composite shipping volumes and shipping costs. In conventional practice, the truck body is normally completed at a manufacturing facility by securing the various plates and beam members thereof together by standard welding processes.

The completed truck body is then cut into several sections at the various welds for shipping purposes. The re-assembly and fabrication of the component parts at a customer’s job site requires complex fixtures and methods for applying high quality welds over the welded joints which have been severed previously. In addition to the laborious and time-consuming nature of such a procedure, the resulting welds are sometimes found defective to thus impair the structural integrity of the completed truck body.

SUMMARY OF THIS INVENTION

An object of this invention is to overcome the above, briefly described problems by providing an economical and non-complex modular truck body which exhibits a high degree of structural integrity and a method of making the same expeditiously. The truck body comprises a pair of upstanding and laterally spaced modules of L-shaped cross section, a bottom module having its outer ends secured to inner ends of the side modules and an upstanding front module secured between the side modules and having its lower end secured to the bottom module. The modules are pre-assembled at a manufacturing facility and temporarily attached together. The modules are then disassembled and shipped to a job site whereat alignment means, employed during the pre-assembly operation, are utilized to precisely attach the modules together for final assembly purposes.

BRIEF DESCRIPTION OF THE DRAWINGS

Other objects of this invention will become apparent from the following description and accompanying drawings wherein:

FIG. 1 is a side elevational view of an off-highway truck employing the modular truck body of this invention thereon;

FIG. 2 is an exploded, side elevational view of the truck body;

FIG. 3 is an isometric view of the truck body, showing it in an inverted position during pre-assembly thereof;

FIG. 4 is a front elevational view of the FIG. 3 truck body;

FIG. 5 is an enlarged sectional view of a front portion of the truck body, taken in the direction of arrows V—V in FIG. 3;

FIG. 6 is an enlarged sectional view, taken in the direction of arrows VI—VI in FIG. 3; and

FIG. 7 is an enlarged sectional view of a front portion of the completed truck body of FIG. 1.
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3 ing relationship thereon. A plurality of beams 42 are secured to beams 41 in transverse relationship there-
with. A pair of laterally spaced L-shaped plates 43 are secured to the outer edges of a conforming outer wall
44 to provide a box-like sidewall at the forward, upper end of each side of the truck body.

PRE-ASSEMBLY OPERATION

FIG. 3 illustrates the truck body after it has under-
gone a pre-assembly operation, prior to disassembly and shipping thereof to a customer's job site. In partic-
ular, the side, bottom and front modules are pre-
aligned at a manufacturing facility to facilitate expedi-
tious final assembly thereof at such job site.

Suitable jigs and fixtures are employed to retain the
modules in their FIG. 3 position wherein they may be
tack welded together, as indicated by tack welds 45, for
example. A plurality of combined alignment and releas-
able fastening means 46 are employed between adja-
cent pairs of modules to assure precise attachment of
the modules together. Such means may comprise a pair
of first and second L-shaped brackets 47 (FIG. 5) hav-
ing their lower legs welded or otherwise suitably se-
cured to plates 22 and 29, respectively, subsequent to
the application of tack welds 45.

The upstanding legs of the brackets will thus abut
each other in back-to-back relationship to align respec-
tive apertures 48 thereof. Each pair of aligned ap-
ertures are adapted to receive a fastener 49, such as a re-
leasable nut and bolt. After the side, bottom and front
modules have been attached together by fastening
means 46, such fastening means, along with tack welds
45, are released and the truck body is disassembled into
its modular units.

FINAL ASSEMBLY OPERATION

Upon such disassembly, the truck body is shipped to
a customer's job site or the like, along with canopy
module 20, four tie rod assemblies 50 and other miscel-
naneous hardware. At such job site, the modules are
again positioned as shown in FIG. 3 and fastening
means 46 are re-installed to fix the side, bottom and
front modules in their precise positions. Simultaneously
therewith, tie rod assemblies 50 are connected between
side plates 21 of the side modules to further rigidify the
assembled truck body during the subsequent welding
operation.

Referring to FIG. 5, each end of each tie rod as-
sembly has a threaded extension 51 secured thereon which
extends through an opening 52, formed through a re-
pective side plate, and receives a nut 53 thereon. An
outer face 54 of the tie rod will abut an inner surface of
the side plate to precisely set the predesigned distance
between the inner surfaces of the side plates. Welds W,
shown in dotted lines in FIGS. 5 and 6, are then applied
between the beams defined between the outer ends of
the bottom plate and the inner ends of the side plates.

As previously suggested in reference to FIGS. 2 and
6, the beam at a forward end of a truck body includes
an overlapping of the adjacent ends of plates 22 and 29
at flange 28 to increase the structural integrity thereat.
The ends of U-shaped connecting members 55 and 56
are each locked mechanically in like-shaped recesses
27 and 32 (FIGS. 5 and 6) and welded to straddled rib
26 and beam 31. Members 56 each have a pair of cut-
outs 57 (one shown in FIG. 6) formed on lower edges
thereof to accommodate raised flange portion 28 of
bottom plate 22.

The front module is then welded in place in a manner
similar to that described above. The integrated side,
bottom and front modules are then inverted and the
canopy module is suitably welded in place. The com-
pleted truck body is then mounted and attached on
frame 12 by pivot means 15 (FIG. 1) and cylinders 16
are pivotally interconnected therebetween.

Although fastening means 46 preferably remain se-
cured to the truck body during installation thereof on
frame 12 of the truck (FIG. 1), tie rod assemblies 50
are preferably removed therefrom. Such removal may
be accomplished by first removing nuts 53 from the
ends of each tie rod assembly and by then cutting the
tie rod assembly in half. Openings 52 may be suitably
plugged subsequent to such removal, as indicated by
the non-appearance of such openings in FIG. 1.

We claim:

1. A modular truck body disposed on a longitudinal
axis thereof comprising

a pair of upstanding and laterally spaced side mod-
dules, each having an L-shaped cross section to
comprise a generally vertical side section and a
generally horizontal bottom section,

a generally horizontal floor module having outer ends
thereof secured to respective inner ends of said
side modules,

an upstanding front module having outer ends
thereof secured between forward ends of said side
modules and a lower edge thereof secured to said
floor module,

a plurality of longitudinally spaced L-shaped ribs
having a U-shaped cross section secured exteriorly
on each of said side modules, each rib terminating
at an inner end short of the inner end of such side
module,

a plurality of transversely disposed and longitudinally
spaced beams having a U-shaped cross section se-
cured exteriorly on said bottom module, each
beam extending between the inner ends of a pair of
said ribs and terminating at outer ends thereof
short of the outer ends of said bottom module, and

a connecting member having a U-shaped cross sec-
tion secured between each outer end of each of
said beams and the inner end of a respective rib,
wherein the inner end of each of said ribs and the
outer end of each of said beams has a recess
formed thereon along their entire edge for receiv-
ing an end of a respective connecting member
therein, and wherein said side modules are further
secured together by a plurality of combined align-
ment and releasable fastening means.

2. The modular truck body of claim 1 wherein a rear-
ward end of said truck body is pivotally mounted on
a frame of a vehicle and at least one hydraulic cylinder
pivotally interconnected between said frame and said
truck body for selectively tilting said truck body rear-
wardly about said pivot means.

3. The modular truck body of claim 2 wherein said
vehicle further comprises an operator's station and fur-
ther comprising a canopy module secured on a forward
end of said truck body to overlie and protect said oper-
ator's station.

4. The modular truck body of claim 1 wherein said
floor and front modules are secured together by welds
at respective seams therebetween.

5. The modular truck body of claim 1 wherein each
of said fastening means comprises a first bracket se-
cured to said bottom module and a second bracket se-
cured to a side module and positioned closely adjacent to said first bracket.

6. The modular truck body of claim 5 wherein each of said fastening means further comprises a pair of aligned apertures formed through said first and second brackets and a releasable fastener disposed in said apertures.

7. The modular truck body of claim 1 wherein a flange is formed on the end of each of said side modules, said flange overlapping said floor module.

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